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ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
AUGUST 3, 1995, 9:00 A.M.
EXECUTIVE CONFERENCE ROOM

Present:	R. A. Welke	G. D. Taylor	C. J. Arnold
	T. A. Coleman	D. T. VandenBerg	P. Lynwood
	C. Roberts	N. Stoner (FHWA)	J. D. O'Doherty
	J. W. Reincke		

Guests: W. C. Turner

OLD BUSINESS

1. **Approval of the Minutes of the July 6, Meeting - G. D. Taylor**

   Minutes of the July 6, 1995, meeting were approved as written.

2. **Operation Instruction 3000.01 (Engineering Operations Committee) - R. A. Welke**

   The revised Operating Instruction 3000.01 was approved as written.

3. **General Discussion - R. A. Welke**

   A lengthy discussion centered around the increased number of ongoing projects requiring construction under traffic and the importance of maintaining effective traffic operations in construction work zones. The EOC concluded that a Constructability Conference will be of value to the department and the construction industry.

   ACTION: Paul Miller and C. J. Arnold, co-chairs, were requested to take the lead roll in developing a program (i.e. four or five breakout sessions) for the conference to be held this winter (1995).

4. **Research Centers of Excellence (Refer to EOC, June 1, 1995, New Business Item 1) - J. Reincke/R. Maki**

   An overview of the proposed operational features of the Research Centers of Excellence was presented. Using the Pavement Center of Excellence as an example, key characteristics and benefits of the centers include:

   - An advisory council, comprised of department technical staff and university staff, will oversee each center.
   - Research that is product oriented to address identified needs of the department;
   - Technical Advisory Group (TAG) will be established for each project to guide, direct, and oversee the research effort;
   - Reduction of time required to initiate a research project;
   - Better utilization of technical expertise available at each center;
   - A reporting mechanism established to keep EOC informed of progress made on all research activities, with specific emphasis on those projects that are strategically critical to the department.

   The EOC was requested to approve the proposed operational structure for the Research Centers of Excellence and consideration of a process to provide strategic direction for research that facilitates the needs of the department.

   ACTION: EOC approved the operational structure for research centers of excellence.

   Cal Roberts was requested to draft a plan outlining the mechanism for the inclusion of a strategic plan that provides direction for selecting the annual research projects undertaken by the research centers of excellence.

NEW BUSINESS

1. **Mobilization - R. A. Welke**

A review of several construction projects revealed that a number of jobs have unusually high bid costs associated with mobilization. In view of our present bidding procedures, it appears that the projects' mobilization cost is not representative of the work activities required to construct the facilities.

ACTION: The Design Division was requested to investigate and provide an assessment of the different functions as related to mobilization costs (i.e. type, size of project), and present their findings/recommendations for consideration at the next EOC meeting.

2. **Report by the Barrier Advisory Committee on Traffic Barriers at Movable Bridges - G. Erickson/C. A. Libiran**

The Barrier Advisory Committee (BAC) was asked to review MDOT's policy concerning the need to provide positive traffic barriers on the approaches to movable bridges. The question arose because the 1988 AASHTO Specifications for Movable Highway Bridges indicate the need for a positive traffic barrier on these bridges; from Section 2.1.6, "Two gates shall generally be provided on each approach roadway to a movable span bridge. The first to act as a warning device and the second to be a physical barrier...When bascule leaves effectively block the roadway, the physical barrier gates may be omitted."

The BAC conducted an extensive investigation of MDOT's movable span bridges, made an assessment, and presented the following recommendations:

A. Recommends not using a positive barrier for double leaf bascule bridges since the raised bridge leaves would serve as the barrier;
B. The Grand Haven bascule bridge, carrying US-31 over the Grand River, be investigated to see what could be done to prevent a vehicle from sliding backward, off the open leaf, into the water;
C. No action is recommended for the US-41 bridge over Portage Lake;
D. No action be taken on the M-64 over the Ontonagon River bridge since it is currently being studied for replacement, with a proposed construction around 1998; and
E. Any movable bridge built in the future should be of the double leaf type and designed to have only a small space between the leaf and the approach span.

ACTION: The EOC approved the report and recommendations as presented, with the stipulation that the report be revised to address the potential of vehicles falling into the bridge pit (counter-weight pit) area. In addition, the Design Division review each bridge to determine what is the most reasonable approach to address vehicles from falling into the bridge pit area.

3. **Statewide Pavement Marking Program - R. Maki**

The Traffic and Safety Division has recognized two problem areas in MDOT's statewide Pavement Marking Program, including:

A. Raised pavement markings (RPM) are being dislodged from pavements after installation. This is due, in part, to improper installation, snowplowing and/or accelerated pavement deterioration.
B. Covering pavement markings or removing/installing RPM castings for maintenance activities.

ACTION: The Traffic and Safety Division implemented an action plan to provide improved coordination of program activities, as well as revising the contractor's contract to require having a one year warranty in the contract to address failures.

4. **Guardrail Inventory - R. Maki**

In 1982, then Deputy Director of Highways, G. J. McCarthy, requested that a statewide inspection of guardrail be initiated as a result of a substantial judgement entered against the department for allegedly rotten wood guardrail posts. The Traffic and Safety Division was directed to design and

coordinate a guardrail inventory system in cooperation with the Materials and Technology, Construction, and Maintenance Divisions.

This system was completed by: using photolog; field verification all guardrail locations and components; entering the data in a computer database; and software and updating procedures were developed to keep the inventory current for future use and document construction and maintenance activity.

Maintaining an updated system is a major problem. The Maintenance and Traffic and Safety Divisions will develop for EOC consideration a plan for implementation that will address the maintaining and updating of the inventory system.

5. **Summary of Guardrail Ending Status - C. J. Arnold**

The Barrier Advisory Committee has selected the Slotted Rail Terminal (SRT) as our new standard guardrail ending. In their review of endings, they found no choices available meeting NCHRP 350 requirements. Only two out of nine endings that meet NCHRP 230 are flared, gating terminals. These are the Modified Eccentric Loader Terminal (MELT) and the SRT. The results of the crash tests were reported and FHWA found the SRT design to be a "significant improvement over both the Eccentric Loader BCT and the MELT". The SRT features strategically located slots in the w-beam rail that reduces the buckling load. This substantially reduces the potential for secondary impacts with bent or kinked W-beam rail elements. The SRT is a proprietary ending patented by Trinity/Syro. They intend to request that the SRT be approved for use in Michigan according to 23 CFR 635.411. This regulation would make the use of a proprietary terminal eligible for federal funding if no equally suitable alternate exists. Based on the NCHRP 230 results, they do not find the MELT to be an equally suitable alternate.

Information presented at the 74th Annual Meeting of the TRB indicated the estimated material cost would be comparable to the ELT or MELT. The installation costs would be similar to that of our current BCT.

ACTION: EOC approved the recommendation as presented.

(Signed Copy on File at M&T)
Calvin Roberts, Secretary
Engineering Operations Committee

cc: EOC Members
District Engineers

G. H. Grove	G. J. McCarthy	L. K. Heinig	T. Adams	
E. D. Winkler	D. L. Coleman	W. C. Turner	D. L. Smiley	
L. W. Martin	J. Becsey		R. W. Muller	R. E. Nordlund
L. E. DeFrain	G. L. Mitchell	G. J. Bukoski	C. W. Whiteside	
I. B. Patel	R. D. Till		M. Newman	A. G. Ostensen